



LOCKHEED MARTIN



NDIA Technical Information Division Symposium

Integration of Systems Engineering & Supportability

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Overview of the LM Sustainment Business Base

**C2 of DoD
Distribution &
Transportation**

**C4ISR
COCOM
Control of
Warfighter Capability**

Logistics Command & Control

e.g. GCSS, GTN, AF Knowledge System,
AF NIPRNET/SIPRNET Portal, ILS-S, FIRST,
Maint.Training, ERP Study, Navy Log EA,
AF Enterprise COTS Integration, C2 Constellation, MARCOR AB

DoD Enterprise System Implementation

e.g. DLA BSM, JEDMICS, DMS, JLAOTD

**Performance Based Logistics, Prime Vendor,
TSSR, SCM, System Support and Maintenance**

MS2

- MK 41
- AEGIS
- ARCI
- A/C Tires
- Trident Nav
- Q70 CDVD
- BSY-2 POSS
- Va.Class NPES

M&FC

- HIMARS
- JAVELIN
- F-14 LANTIRN
- Apache TADS/PVNS

STS

- CASS
- MEP

ALC

- A/C Maint./Repair
- Aviation SCM

LMSI

- H-60 TTT
- H-60 Avionics
- Merlin

Aero

- JSF
- F-16
- F-117 TSPR

LMSM

- Log. Support Services
- WIN T Log

SS

- AF OSI Maintenance
- USMC Auto Log

Space

- THAAD
- TRIDENT MSL

New Acq.

Prog.
Pursuits

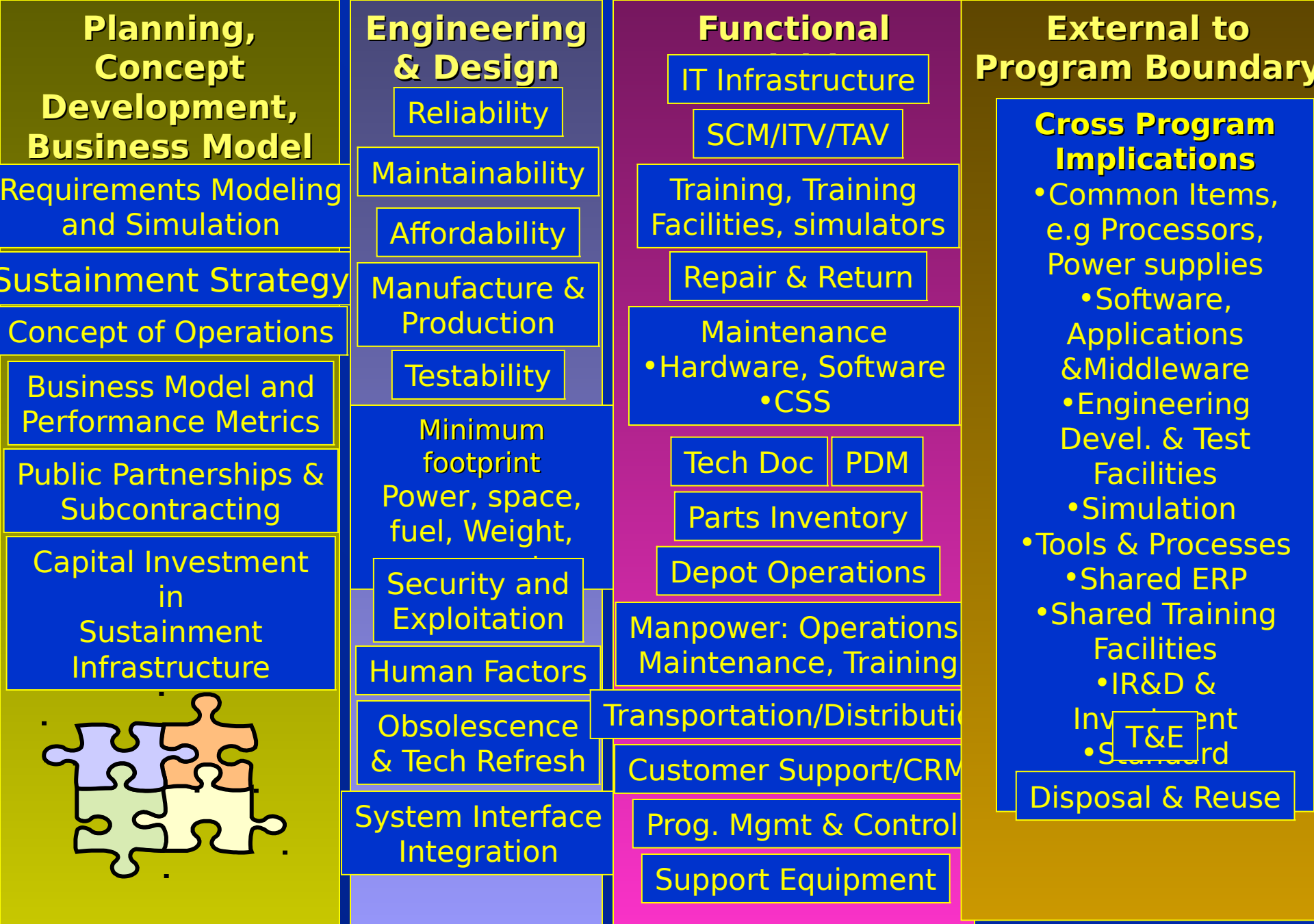
- MMA
- LCS
- MUOS

**Delivery of
Warfighter
Capability ~ Present
LM Business
Base (\$5B+)**

Total systems support from design to disposal (D2D)



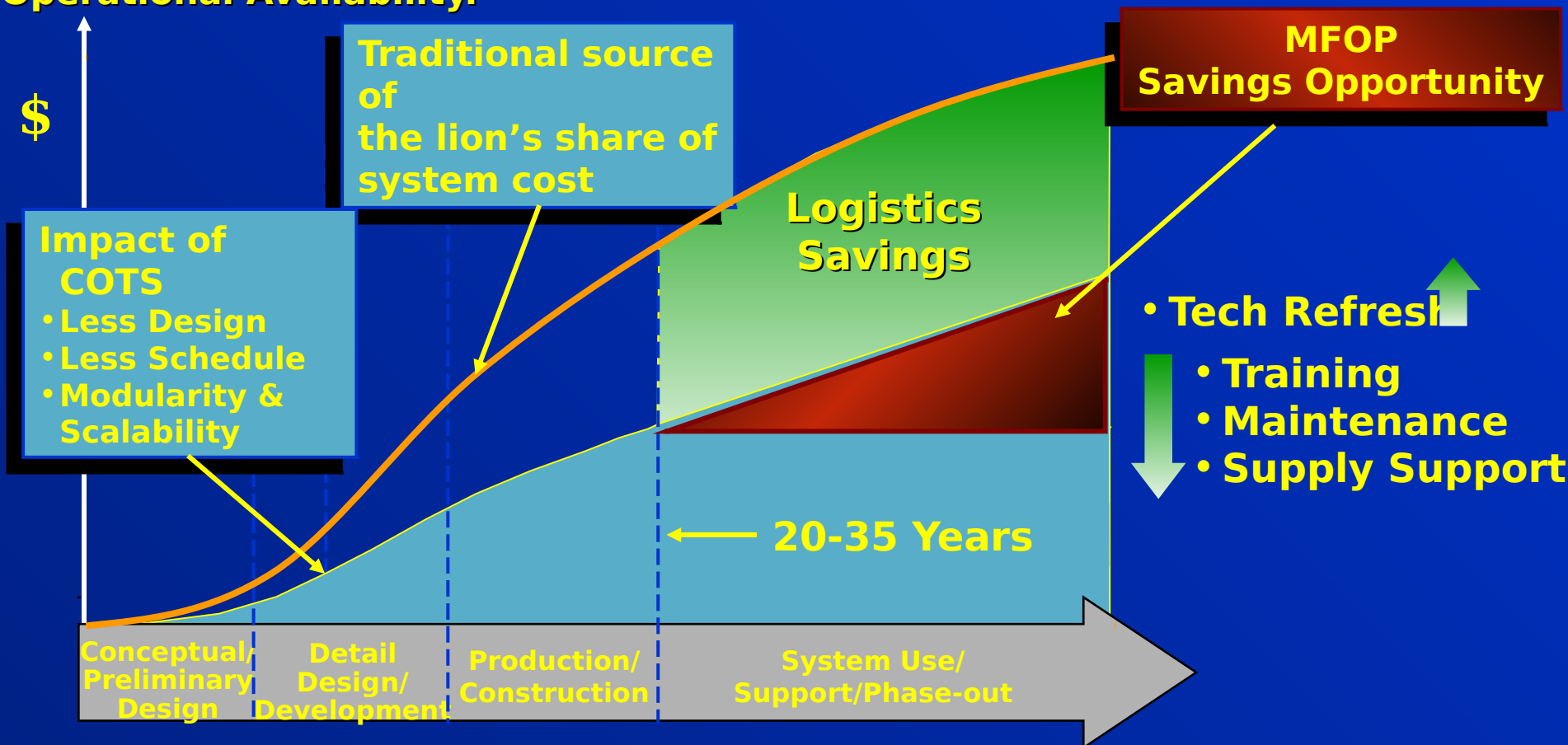
**End State: Integration of Systems Engineering & Supportability
For the life of the system**



In the Trade-Space Domain, ALL Elements are Mutually Inclusive

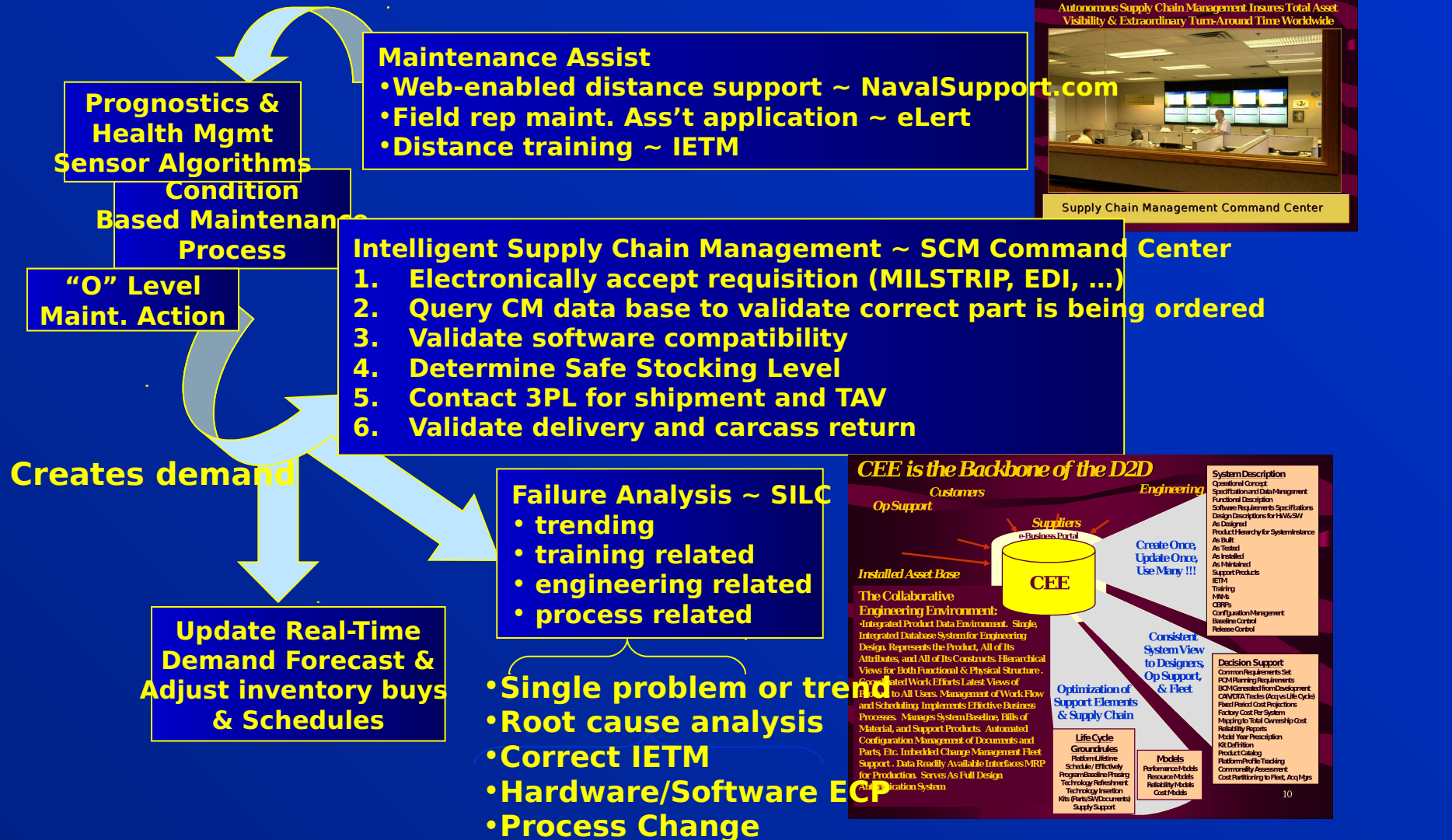
Maintenance Free Operating Period (MFOP) - Wedge of Opportunity

- **MFOP** - Eliminates maintenance and the need for associated support while aligning logistics actions with preplanned COTS Technology Refresh and Insertion for improved Operational Availability.



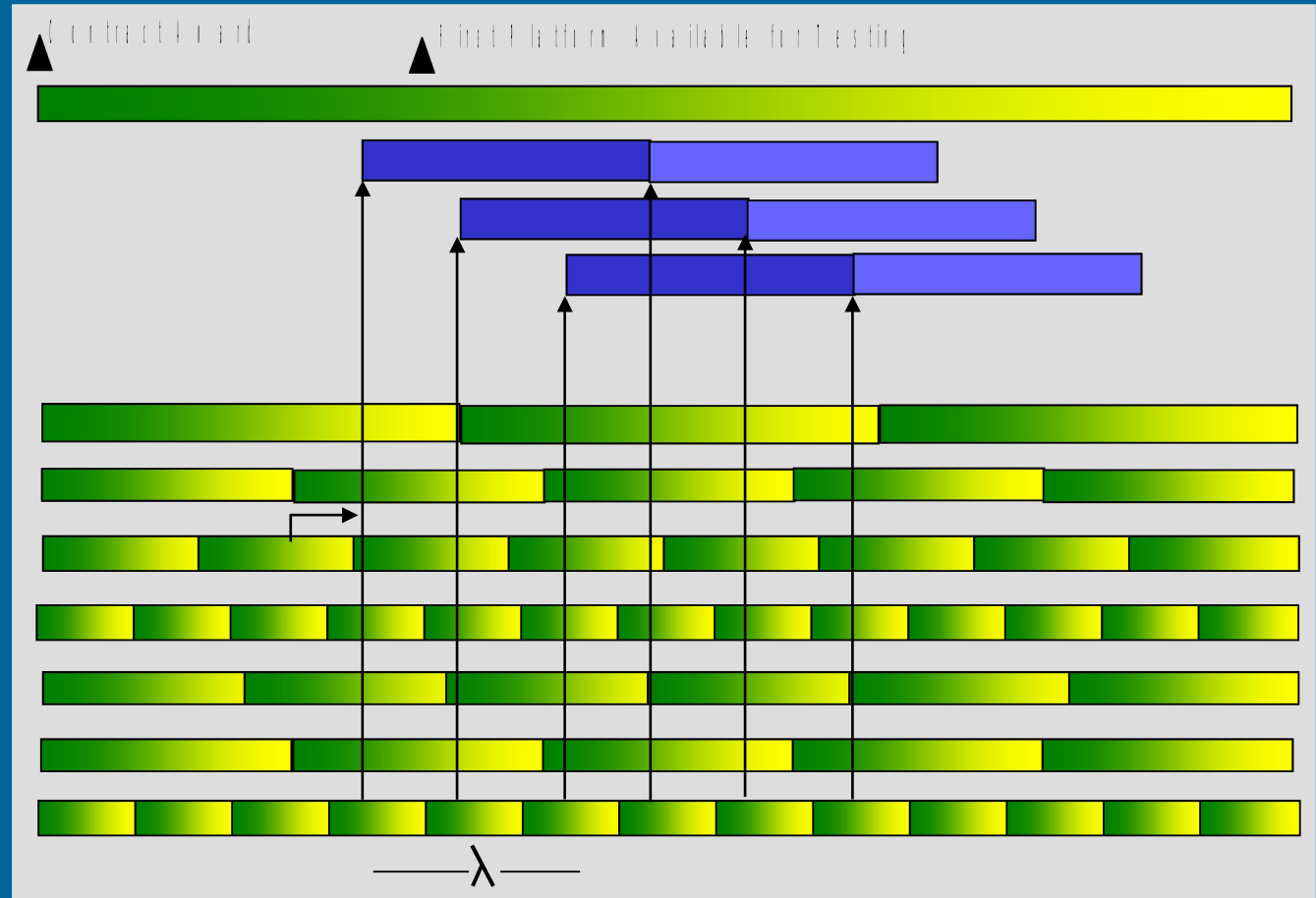
**Cumulative Life-Cycle Costs
Incurred by the Program/System**

Design to Disposal™ Intelligent Logistics Architecture ~ Functional Flow



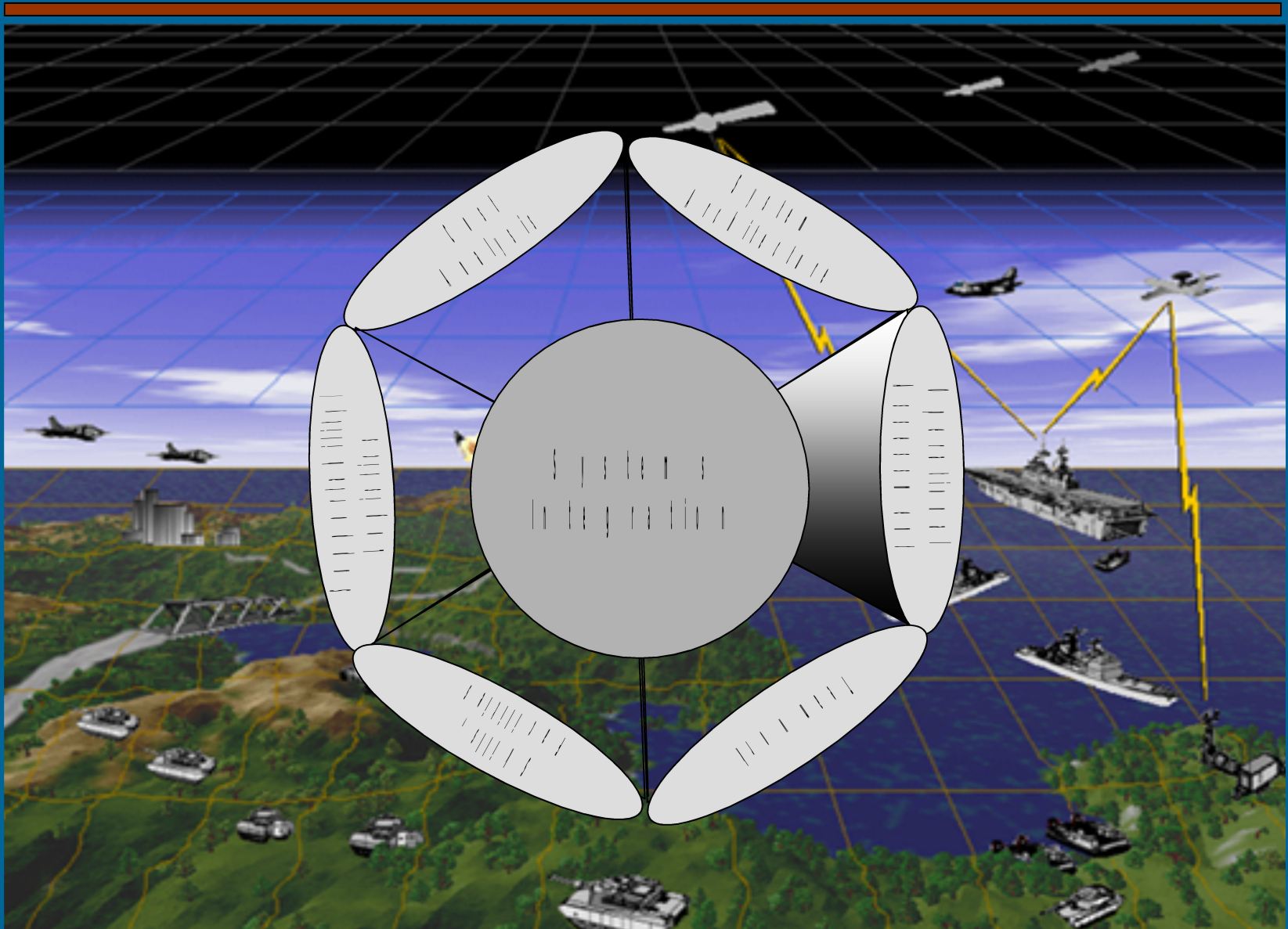
Autonomous & Intelligent Design to Disposal Management & Control of Maintenance, Engineering, CM, Training, Field & Distance Support, Supplier/Repair, Warehouse, Inventory, Transportation, PHM, Government Interfaces & Portals

100%

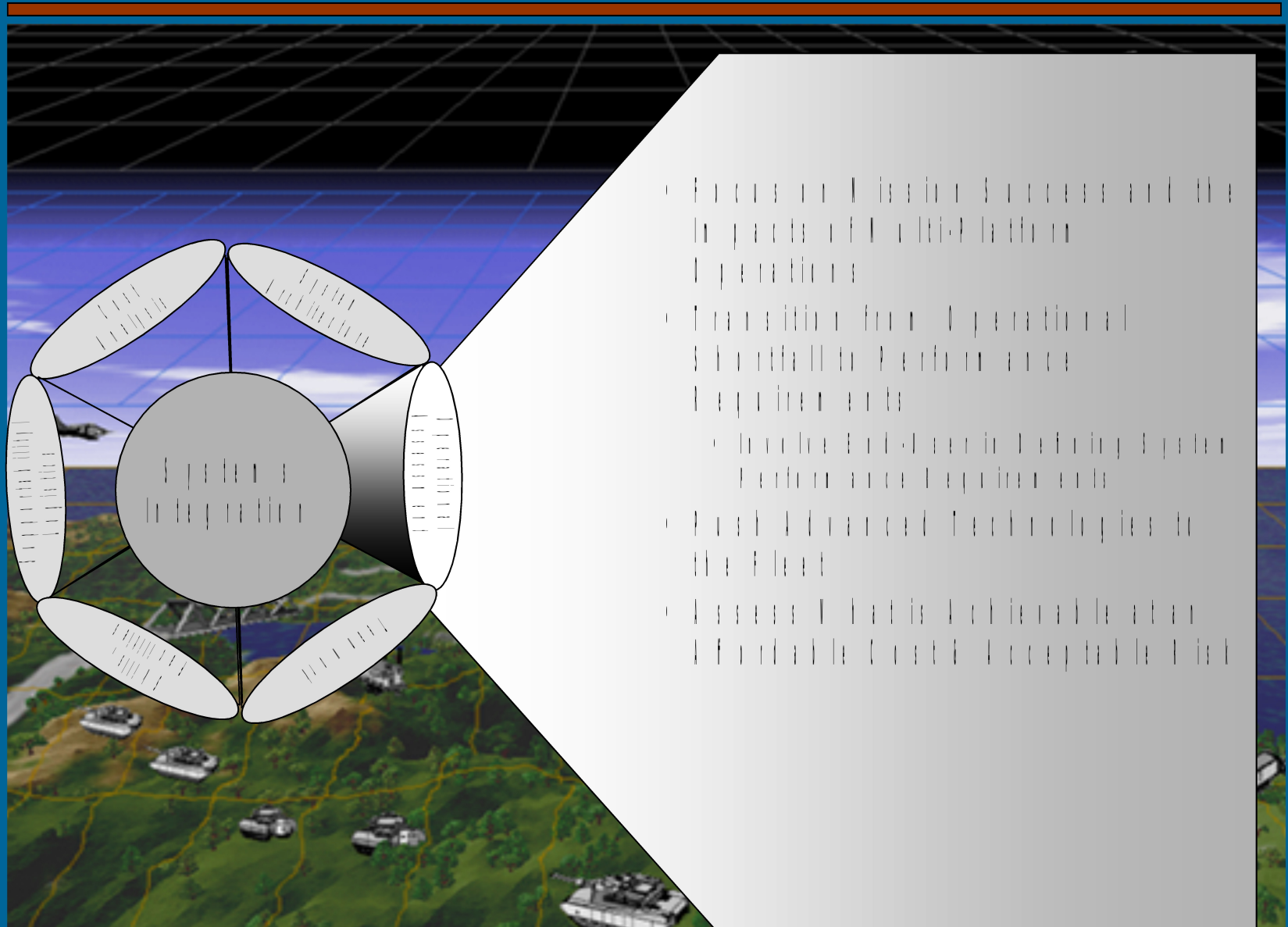


System's Integration :

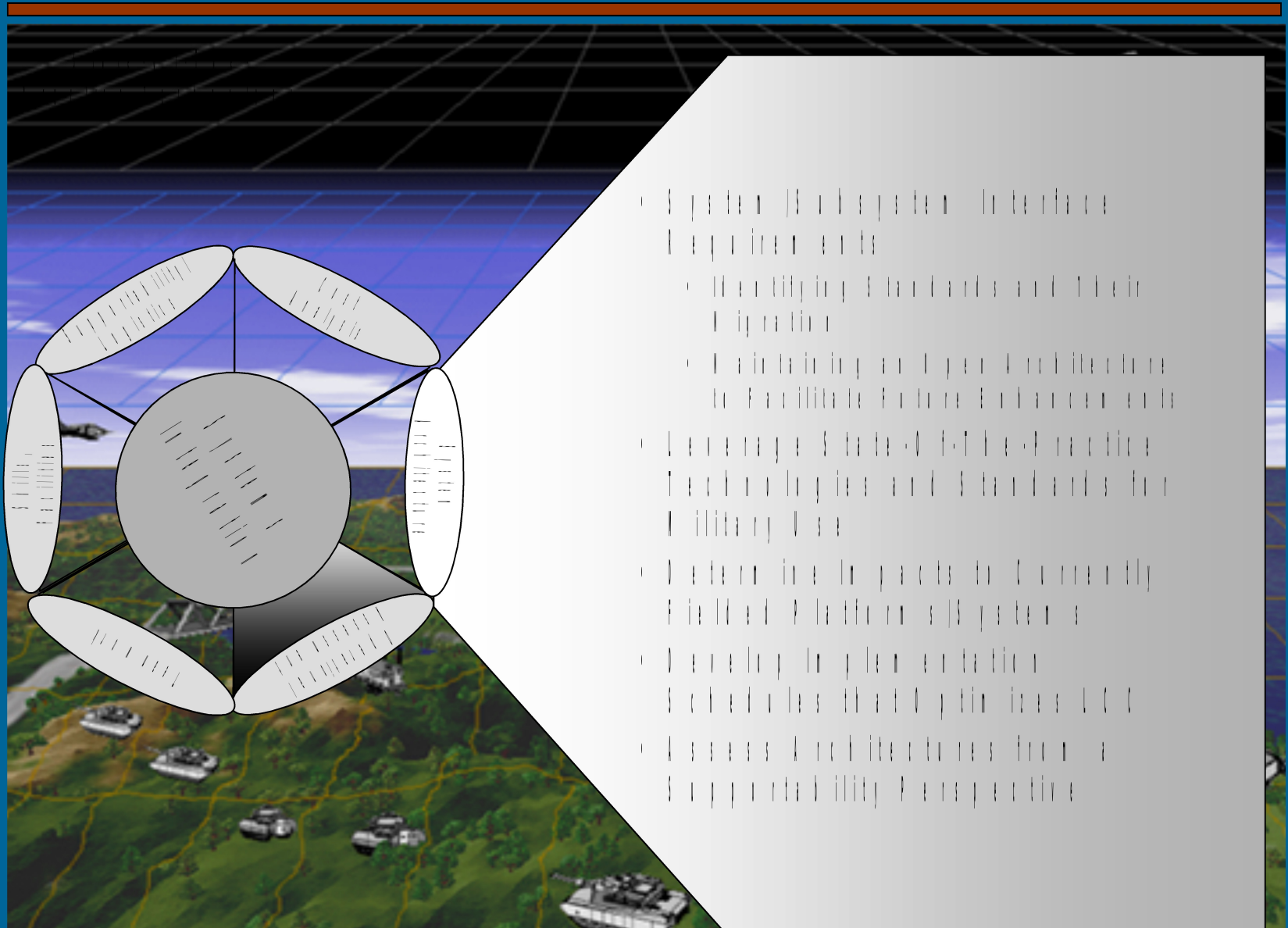
Component's to System's Integration :



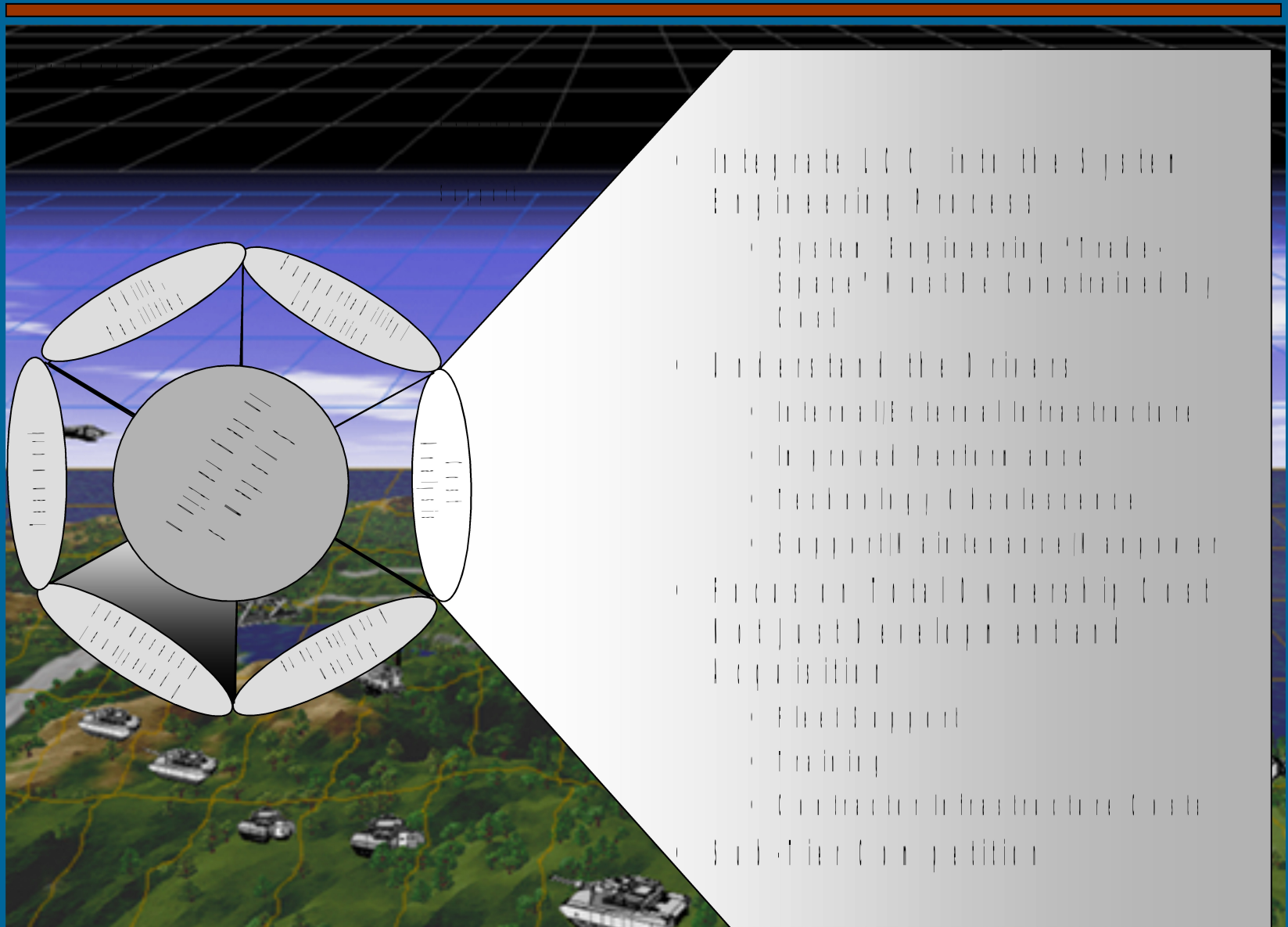
System's Integration : Managing Operational Effectiveness



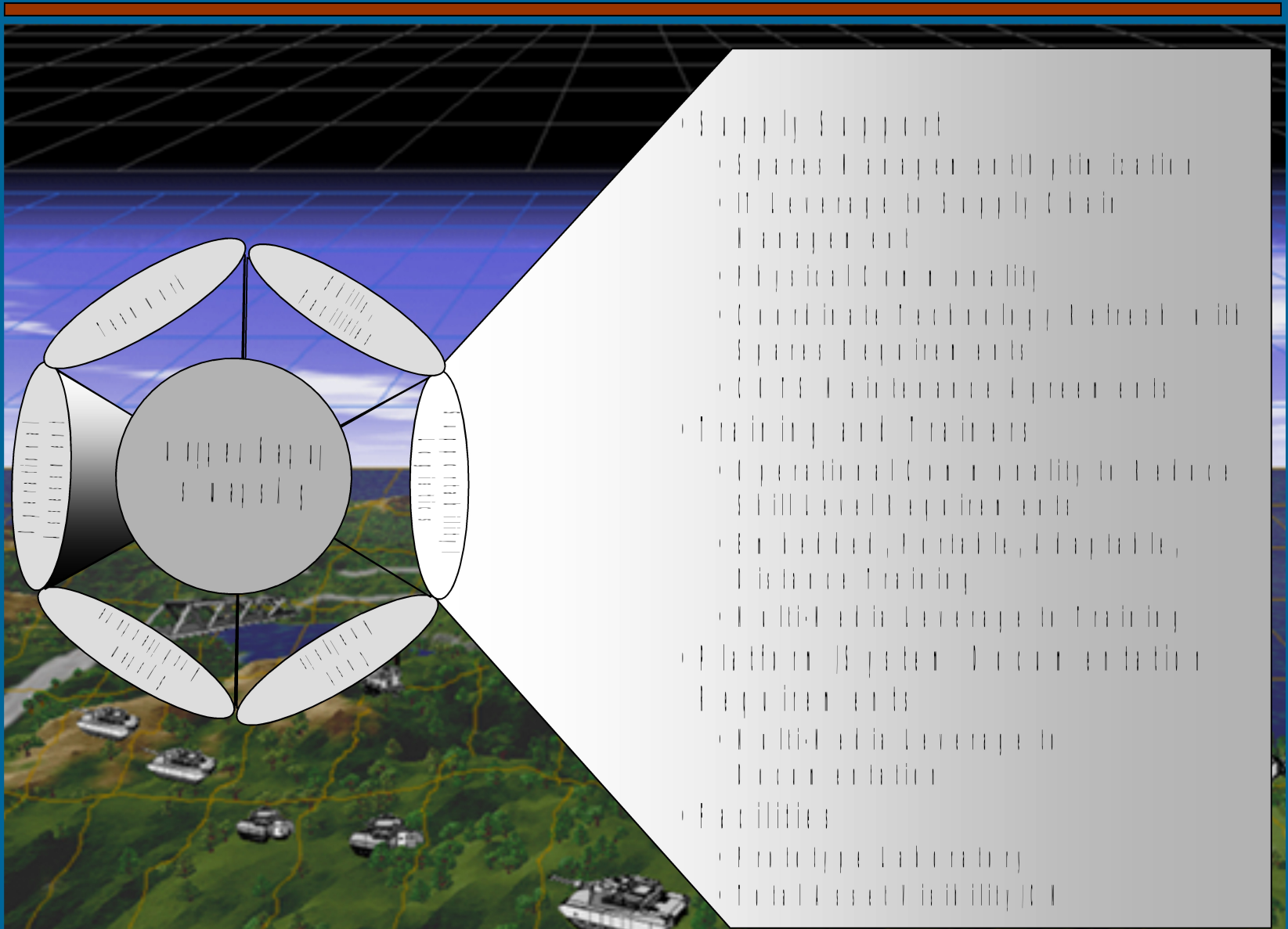
System Integration : System Architecture



System's Integration : Cost Analysis



Systems Integration : Sustainability Engineering and Logistics Planning





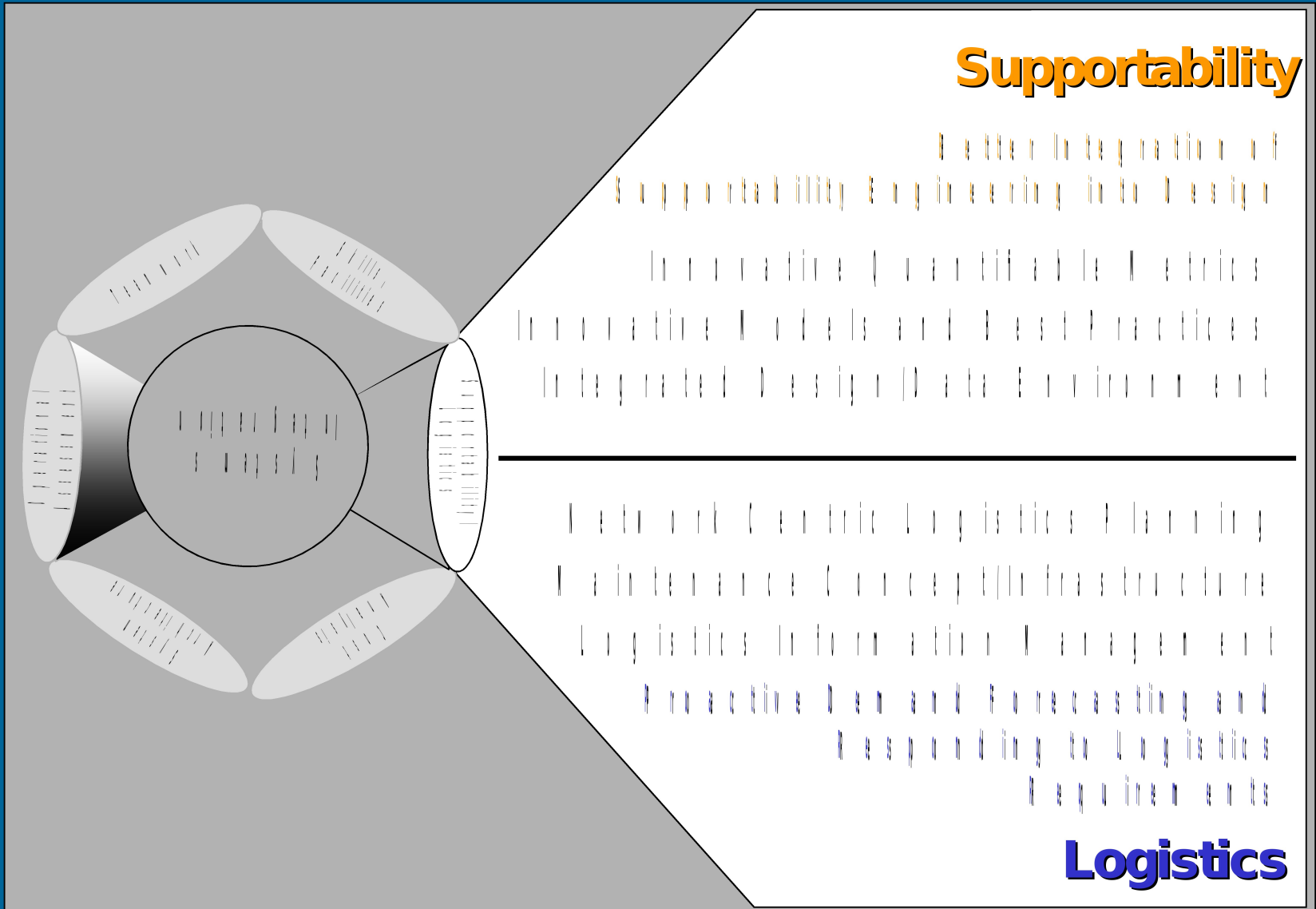
Supportability

Center Integration of
Supportability Engineering in the Design

Innovative Qualifiable Metrics
Innovative Models and Best Practices
Integrated Design Data Environment

Network Centric Logistics Planning
Maintenance Conceptual Framework
Logistics Information Management
Proactive Demand Forecasting and
Responding to Logistics
Requirements

Logistics



System Integration

The Total Sustainability Approach - Benefits

• For the Customer

- Reduced Total Ownership Costs (TOC)
 - Increasing Availability
 - Executing Technology Refreshes
 - Exploiting Commercial O&M Support Infrastructure
- System Infrastructure Performance Improvements
- Facilitate Functional Upgrades
- Elimination of Obsolescence
- Guaranteed Operational Availability

• For Industry

- Strategic Discontinuation as System Integrator
- Expanded Business Base
 - Technology Refresh and Insertion Planning
 - Management of Spares, Spares Inventory, and Repairs
- Uniform Resource Planning - Eliminates Large Shifts in the Manring Profile for Re-Design for Obsolescence



Total System Sustainment Enablers

- Primarily through Implementation of the Systems Integration Approach
- Leveraged by business and engineering approaches
 - Effective Public-Private Partnerships
 - Performance-By-the-Hour™ Contracts ~ The Incentive for Industry to Reduce TOC, Which In Turn Results In:
 - ▯ MFOP ~ Maintenance Free Operating Period Design
 - ▯ Employing Use of PHM: Prognostics and Health Management
 - ▯ Web-Enabled Distance Support (e.g., NavalSupport.com) and Distance Training
 - ▯ Autonomic Supply Chain Management and JIT Support
 - Logistics Command and Control for Sense and Respond

An Integrated Solution Set for Full Service Support